

### REMARKS

Favorable reconsideration of this application, in light of the following discussion and amendment, is respectfully requested.

After entry of the foregoing amendment, Claims 11-20 are currently pending in the present application. Claims 11, 15 and 18 have been amended to address cosmetic matters of form. Thus, no new matter is added.

By way of summary, the Official Action presents the following issues: The specification is objected to under 35 U.S.C. § 132 (a); Claims 11, 15 and 18 have been objected to as to matters of form; Claims 11-20 stand rejected under 35 U.S.C. § 112, first paragraph; Claims 11-17 and 20 under 35 U.S.C. § 102(b) as unpatentable over the publication “Automated Performance Modeling from Scenarios and SDL Designs of Distributed Systems” to El-Sayed et al. (hereinafter El-Sayed); and rejected Claims 18 and 19 under 35 U.S.C. § 103(a) as unpatentable over El-Sayed in view of U.S. Patent No. 6,324,496 to Alur et al. (hereinafter Alur).

### OBJECTION TO THE CLAIMS

With respect to the objection of Claims 11, 15 and 18 as outlined at paragraph 3 of the Official Action, these claims have been amended in accordance with the suggestions of the Office.

Accordingly, Applicants respectfully request the objection of Claims 11, 15, and 18 be withdrawn.

### OBJECTION UNDER 35 U.S.C. §132 (a)/§112, FIRST PARAGRAPH

The Office has objected to the claim language “a resource specification quantifying resources available from physical hardware of the system” as lacking support in the disclosure. In this regard, Applicants respectfully direct the

Examiner's attention to page 29 of the Applicants specification which notes that the resource model includes the machines, the size of the buffers and the policy for sequencing the simultaneous processing operation of these machines. The "size of the buffers" is recognized in the art as an exemplary resource available from physical hardware of a system as recited in the claims. Further evidence in this regard is attached as Exhibit A (paragraph 7) confirming this support as viewed from one of skill in the art.

Accordingly, Applicants respectfully request that the objection under 35 U.S.C. §132(a) and the rejection under 35 U.S.C. §112, first paragraph, be withdrawn.

#### OBJECTION UNDER 35 U.S.C. §102

The Official Action has rejected Claims 11-17 and 20 under 35 U.S.C. §102 as being unpatentable over El-Sayed. The Official Action states that El-Sayed describes all of the Applicants claimed features. Applicants respectfully traverse the rejection.

Applicants Claim 11 recites, *inter alia*, the process for generating a performance model from a functional model for a system including a plurality of distributed hardware and software entities that engage to provide a service to at least one user, including:

formalizing the execution flows using a notation identifying causal relationships between different software entities of the system that are involved in the execution flows, the notation including resource consumption metrics, attributing specific resource consumption values in correspondence to a respective execution flow;

developing an intermediate model that comprises, in addition to the formalized execution flows, a resource specification quantifying resources available from physical hardware of the system, and an environment specification quantifying the amount of requests generated by said at least user; and

automating conversion of the developed intermediate model into a performance model. (emphasis added)

El-Sayed describes a performance model building process that takes an MSC model and generates a layer queuing network (LQN) performance model.<sup>1</sup> More specifically, El-Sayed describes taking an SDL specification including execution traces.<sup>2</sup> El-Sayed identifies messages from traces, different services provided by each process in the trace, and finds the precedence relationships between activities in each service.<sup>3</sup> More specifically, El-Sayed describes taking an SDL specification including execution traces.<sup>4</sup> Finally, El-Sayed maps the software architecture into an LQN model.<sup>5</sup>

Applicants submit that amended Claim 1 recites a notation including resource consumption metrics attributing specific resource consumption values and correspondence to a respective execution flow. The consumption metrics are developed to reflect an environment specification quantifying the amount of requests generated by at least one user. In this way, a developed intermediate model may be automatically converted into a performance model such that the performance model includes notations identifying the resource consumption metrics in correspondence to a respective execution flow.

Claim 11 is distinguishable over El-Sayed as the applied reference fails to disclose or suggest providing the claimed notation to an intermediate model. El-Sayed merely describes using a message sequence chart (MCE) that illustrates different processes, messages passed between the processes, and computational activities that each process executes.<sup>6</sup> El-Sayed fails to describe execution flows

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<sup>1</sup> See El-Sayed at the Abstract.

<sup>2</sup> See El-Sayed at page 130.

<sup>3</sup> See El-Sayed, chapter 4.

<sup>4</sup> See El-Sayed at page 130.

<sup>5</sup> See El-Sayed at pages 132-133.

<sup>6</sup> See El-Sayed at Figures 4-7.

which already incorporate at this stage of the system resource consumption due to these flows.

In response to these previously presented distinctions, the Office Action of June 27, 2008 noted that:

The Examiner disagrees as El-Sayed teaches a notation including a resource consumption values and an intermediate model (LQN sub-models, Fig 1-6). For example, see the second column in page 129 for a resource consumption value...

Thus, the Examiner takes the position that El-Sayed teaches execution flows which already incorporate at this stage of the system resource consumption due to these flows as an LQN model are used to calculate the throughput of processing (Second column of pg. 129). In addition, the Examiner takes the position that El-Sayed teaches a message sequence chart (Fig 2 and Pg 28).<sup>7</sup>

Page 129 of referenced above by the Office, describes obtaining a resource consumption value from a repository. Page 129 of El-Sayed states:

“For each activity, a resource consumption value... must be made available from a repository of “resource functions.””

This description very clearly describes to one skilled in the art that resource consumption values are found in the repository, not incorporated as a notation used to formalize execution flows as specified in the claims.

Further, the second column of page 129 also clearly describes that these resource functions are integrated at the end of building the El-Sayed performance model. As such, these resource values are not present in the earlier stages, thus would not be considered in the art as part of an intermediate model, including a

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<sup>7</sup> Applicants note that the paragraph which bridging pages 9 and 10 of the Official Action refers to an alleged argument advanced by the Applicants regarding features absent from the claims. Applicants respectfully point out that this discussion, as provided in the previously submitted response, was not a distinction of the present claims, but instead, a discussion of the teachings of the El-Sayed cited reference. Thus, of course, El-Sayed discloses a message sequence chart (NCE).

notation identifying causal relationship between different software entities of the system as claimed.<sup>8</sup>

Accordingly, Applicants submit that El-Sayed fails to disclose or suggest all the features of Claim 11. Thus, Applicants respectfully request that the rejection of Claim 11, and the claims depending therefrom, under 35 U.S.C. § 102(b) be withdrawn.

The outstanding Official Action rejected Claims 18 and 19 under 35 U.S.C. § 103(a) as unpatentable over El-Sayed in view of Alur. Applicants respectfully traverse the rejection.

As outlined above El-Sayed does not disclose all of the elements of amended Claim 11, which Claims 18 and 19 depend therefrom. As Alur does not remedy the deficiencies discussed above, Applicants respectfully submit that a *prima facie* case of obviousness has not been presented. Accordingly, Applicants respectfully request the rejection of Claims 18 and 19 under 35 U.S.C. § 103(a) be withdrawn.

Consequently, in view of the present amendment and response, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance. A Notice of Allowance is earnestly solicited.

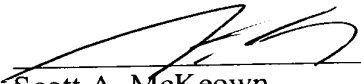
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Respectfully submitted,  
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<sup>8</sup> Further evidence in this regard is shown at paragraphs 8-10 of attached Exhibit A. Exhibit A is a declaration from one of skill in the art.